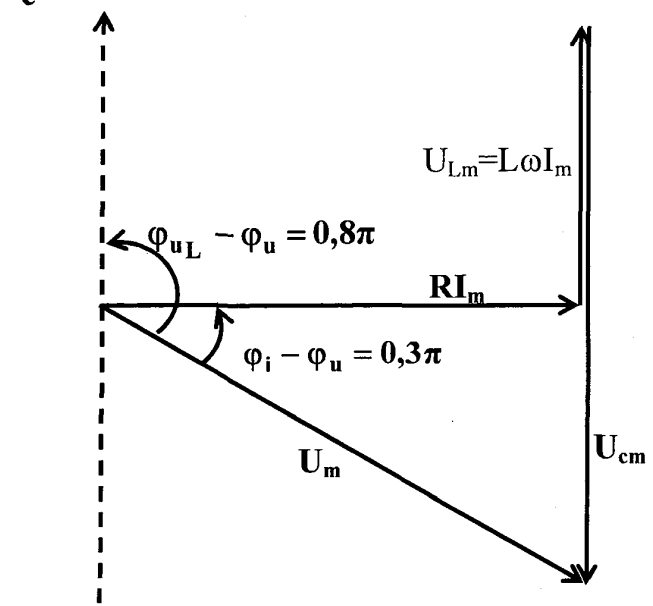
c-



$\varphi_{u_B} - \varphi_u = 0{,}8\,\pi$

C_1 est en avance % à C_2

$C_1 \rightarrow u_L(t)$

$C_2 \rightarrow u(t)$

d-

$$\cos(0{,}3\,\pi) = \frac{RI_m}{U_m} \Rightarrow R = \frac{U_m.\cos(0{,}3\pi)}{I_m}$$

$$R = \frac{100}{0{,}652}\cos(0{,}3\,\pi) = 69\,\Omega$$

R= 69 Ω

- $U_{Lm} = L\,\omega\,I_m$

$$L = \frac{130}{100\,\pi.0{,}6\,52} = 0{,}48\,H$$

L = 0,48 H

- $tg\,(0{,}3\,\pi) = \dfrac{\frac{1}{C\,\omega} - L\,\omega}{R}$

$$\frac{1}{C\,\omega} - L\,\omega = R\,tg\,(0{,}3\,\pi)$$

$$\frac{1}{C\,\omega} = L\,\omega + R\,tg\,(0{,}3\,\pi)$$

$$C = \frac{1}{L\,\omega^2 + R\,\omega\,tg\,(0{,}3\,\pi)}$$

$C = 12.10^{-6}\ F$

$$u_L(t) = 130\sin\left(100\,\pi t + \frac{\pi}{2}\right).\ (v)$$

$u(t) = 100\sin(100\,\pi t - 0{,}3\,\pi)\ .(v)$

$$u_c(t) = U_{cm}\sin\left(100\,\pi t - \frac{\pi}{2}\right).\ (v)$$

$$U_{cm} = \frac{I_m}{C\omega} = \frac{0{,}652}{12.10^{-6}.100\,\pi} = 225\ V$$

Si on fait varier ω , U_m et φ_u ne change pas

3°)

a- u_L en quadrature de phase % à U : $\varphi_{uL} - \varphi_u = \dfrac{\pi}{2}$ or

$$\varphi_{u_L} = \varphi_i + \frac{\pi}{2}$$